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COMBINATION WEEDING AND RAKING TOOL

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3 Field of the Invention

4 This invention is directed toward a manually operable  
5 gardening tool which can be used either as a weeder or as a  
6 rake whereby the user can weed and/or rake without having to  
7 use separate tools for each operation.

8

9 Background Information

10 Methods and apparatus for expanding the usefulness of  
11 hand tools by affixing alternate types of tool heads to a  
12 single tool handle have been the subject of much inventive  
13 effort over the years. The basic approach of providing  
14 multipurpose tools flows naturally from the need to utilize a  
15 number of different hand tools serially in time to accomplish  
16 a gardening task. In gardening or landscaping uses, a first  
17 tool type might be used to precondition the soil, and a  
18 second tool type might be needed to further prepare  
19 particular areas, or to complete processes which were missed  
20 on the initial passes. The use of a long-handled hoe  
21 followed by the use of a long-handled rake to collect the  
22 debris produced by the hoe gives an example of where  
23 iterative uses of alternate tool types are commonly needed.  
24 Hence, multipurpose tools of wide varieties abound; as do

1 devices where a number of different tool heads may be affixed  
2 to a single, specially adapted handle.

3 Common to hand operated gardening tools is the use of a  
4 elongated handle. Secured to one end of the handle is an  
5 implement for use in cultivating, weeding or grooming of the  
6 soil. The tools are typically arranged to complete a  
7 specific task and the tool is thereafter exchanged for the  
8 tool required to complete the next task. Attempts have been  
9 made to combine tools or construct tools with interchangeable  
10 implements, however, such attempts typically employ the use  
11 of bayonet mounts or clamping devices helping little in the  
12 way of efficiency.

13 For instance, U.S. Patent Nos. 2,268,066 and 2,314,685  
14 teach a rake attached to an elongated handle via a spring  
15 mechanism. The device further includes a weed cutter  
16 attached to the handle in a manner that allows the rake to be  
17 stood upright without assistance. The weed cutter is formed  
18 of metal having an elongated body which partly surrounds the  
19 handle to provide support and a "spoon" shaped and sharpened  
20 cutter end.

21 U.S. Patent No. 3,987,609 teaches a manually operable  
22 garden tool which combines the functions of a rake and a  
23 weeder. The tool employs an elongated handle with a  
24 generally flat section coplanar with the handle. A plurality

1 of spring tines essentially coplanar with the section are  
2 provided. Each tine is secured at one end to the curved  
3 periphery and extends outward at right angles whereby the  
4 handle, tines and section define a rake. An elongated weed  
5 blade extends in the same direction as the handle and is  
6 secured at one end of the handle. The other end of the blade  
7 lies in a plane parallel to the tines.

8 U.S. Patent No. 3,921,725 teaches a combination hoe and  
9 fork device. The device includes a handle fixed to a blade  
10 by means of a tang. The tang curves upwardly from the blade  
11 and then generally at a right angle to the blade and is  
12 attached by a suitable socket in the usual manner. The fork  
13 is of standard construction having an outwardly extending  
14 stem which can be attached to the tang of the hoe with U-  
15 bolts or hose clamps.

16 U.S. Patent No. 4,236,742 teaches a retractable rake for  
17 use as a courtesy rake by a golfer at a sand trap, or for  
18 light raking chores in general. The rake has a plurality of  
19 projecting tines which diverge outwardly when they are in  
20 their extended position. When the rake is not in use, the  
21 tines are retractable into the shank of the rake so the rake  
22 is compact and may be stored and carried within a golf bag.

23 U.S. Patent No. 4,843,667 teaches a combination broom,  
24 rake, and pruning knife for use as a household, yard, garden,

1 or industrial tool. The combination tool includes an  
2 elongated handle. The handle has at one end a removable  
3 broom assembly that is held in place by a post which fits in  
4 a socket and a lock screw. A rake tine support chamber is  
5 mounted parallel to the broom support chamber. The rake tine  
6 support chamber provides mounting and support for a plurality  
7 of retractable rake tines, which may be provided with hooked  
8 ends. The retractable rake tines are arranged in two groups,  
9 one on each side of the centerline of the tool, each having a  
10 similar number of tines. Each group of rake tines is  
11 attached by a pivot pin to a sliding linkage. When the tines  
12 are extended, they are supported by the flared end of the  
13 rake tine support chamber and the broom head serves as a  
14 backing for the rake tines limiting their deflection. The  
15 rake tines may be retracted into the rake retraction chamber  
16 by pulling the sliding hand grip. The opposite end of the  
17 handle is provided with a removable knife which may be used  
18 by hand or attached to the handle for pruning purposes.

19 U.S. Patent No. 5,185,992 teaches a tool expanding  
20 assembly which provides the means for rapidly coupling any  
21 one of a number of different tool heads to a preexisting  
22 mother tool. The tool expanding assembly includes a pair of  
23 cylinder-like portions which are fabricated from metal and  
24 rigidly connected together. In use, one of the cylinder-like

1 portions is fitted over the handle of the mother tool and  
2 fasteners are inserted to secure the assembly. The second  
3 cylinder-like portion is constructed to include a square  
4 J-shaped bayonet connector slot, which is adapted to receive  
5 corresponding male bayonet connector elements used to  
6 terminate the ends of various tool heads.

7 U.S. Patent No. 5,411,101 teaches a combination  
8 cultivator and edging tool including a handle and a head  
9 attached to one end of the handle. The head includes a  
10 transverse support member and a row of long cultivator tines,  
11 each tapering from a point of connection to the support  
12 member toward a tip. The tines extend in a common plane of  
13 extension disposed generally perpendicular to the handle and  
14 the transverse support member. The head further includes a  
15 blade having a support edge and a sharpened edge opposite the  
16 support edge. The blade is disposed in the same plane as the  
17 handle and the transverse support member. In use, the handle  
18 is disposed at an angle to the ground for cultivating. The  
19 handle is alternatively disposed vertically with respect to  
20 the ground for edging.

21 U.S. Patent No. 5,743,340 teaches a device for pulling  
22 weeds, plants, small trees and the like which includes an  
23 elongate handle portion terminating in a first end, with a  
24 leveraging head member attached to the first end. This

1 leveraging head member has a first side bearing a weed clamp  
2 having at least one pivoting jaw adapted to close proximate  
3 to a clamping surface, and a second side opposite the first  
4 side bearing a lever arm for mechanical advantage.

5. Hand tools utilizing bayonet type mounts have the  
6 disadvantage of requiring the user to perform the desired  
7 task using two individual tools, wherein each of the tools  
8 has to be handled separately in order to do the job. Often  
9 changing tools with a bayonet mount takes longer than  
10 exchanging complete tools.

11 The prior art also fails to teach a combined tool that  
12 allows the operator to cultivate and change tools to groom  
13 without bending over to change tools. Standing upright  
14 lessens the strain on an individual's back, and combining  
15 tools increases efficiency.

16 Thus, what is lacking in the art is a combination tool  
17 that includes a scuffler hoe and rake for gardening and  
18 landscaping. The combination tool should include a loop type  
19 scuffler blade and a retractably mounted rake head. The loop  
20 shaped scuffler blade should allow weeding and cultivating  
21 operations to be performed while pushing or pulling on the  
22 elongated handle for increased efficiency. The combination  
23 tool should merely require the handle to be rotated to change  
24 tools, allowing cut vegetation to be raked or cultivated soil

1 to be groomed without bending over to change tools. The rake  
2 head should be retractable and/or collapsible to facilitate  
3 weeding operations to be performed in tight areas.

1    Brief Description of the Invention

2        This invention pertains to hand operated gardening and  
3    landscaping tools for use in cultivating soil and/or removing  
4    inferior or unwanted plants from a selected area. More  
5    particularly, the present invention relates to a combination  
6    scuffling hoe and rake assembly. The combination tool allows  
7    an operator to cut unwanted weeds below the ground surface  
8    and thereafter groom the weeded area without having to use  
9    separate tools to complete the task.

10       The tool employs an elongated handle with a scuffer hoe  
11   portion and rake portion attached at a distal end thereof.  
12   The scuffer hoe portion comprises a generally elongated  
13   metal blade formed into a U-shaped loop and sharpened on both  
14   edges. The ends of the metal blade are each secured at the  
15   distal end of the handle, via a ferrule, at an obtuse angle  
16   with respect to the longitudinal centerline of the handle.

17       In one embodiment, the rake assembly is slidably mounted  
18   on the elongated handle and includes a locking means to  
19   secure the rake assembly in a retracted or an extended  
20   position. The rake assembly includes a plurality of tines.  
21   Each tine is fixed in a diverging manner generally coplanar  
22   to the flat portion of the loop blade and includes a formed  
23   tip for drawing together leaves or cut grass as well as  
24   smoothing loose soil.

1        In an alternative embodiment, the rake assembly includes  
2    a plurality of pivotally mounted tines which may be folded  
3    inwardly to narrow the profile of the device. In this  
4    embodiment the tines are pivotally secured to a sliding  
5    member by a pivot pin in an overlapping fashion at one end.  
6    The center portion of each tine extends through a guide  
7    member secured to the distal end of the handle whereby moving  
8    the sliding member toward the distal end of the handle causes  
9    the tines to extend and diverge outward. The sliding member  
10   includes means to lock the sliding member in an extended or  
11   retracted position.

12       The construction of the device allows the rake to be  
13   locked into the retracted position while cultivating for easy  
14   access to confined areas. The tool can then be turned over  
15   and the rake assembly extended so the tool can be used as a  
16   rake to gather cut weeds and/or smooth the cultivated  
17   surface.

18       Thus, an objective of the instant invention is to  
19   provide a novel combination tool that is versatile and  
20   efficient in use, and lends itself to a variety of gardening  
21   and landscaping activities.

22       Another objective of the instant invention is to provide  
23   a combination hand tool having a scuffle hoe blade and a  
24   slidingly retractable rake assembly.

1        Yet another objective of the instant invention is to  
2  provide a combination hand tool which provides a scuffler hoe  
3  and a rake assembly having a set of folding and retracting  
4  tines.                Other objectives and advantages of this  
5  invention will become apparent from the following description  
6  taken in conjunction with the accompanying drawings wherein  
7  are set forth, by way of illustration and example, certain  
8  embodiments of this invention. The drawings constitute a  
9  part of the specification and include exemplary embodiments  
10 of the present invention and illustrate various objectives  
11 and features thereof.

12

13

1    Brief Description of the Figures

2        FIG. 1 is a perspective view of one embodiment of the  
3    instant invention illustrated with the rake assembly in a  
4    retracted position;

5

6        FIG. 2 is a perspective view of one embodiment of the  
7    instant invention illustrated with the rake assembly in a  
8    extended position;

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10       FIG. 3 is a perspective view of one embodiment of the  
11   instant invention illustrated with the rake assembly in a  
12   retracted and folded position;

13

14       FIG. 4 is a perspective view of one embodiment of the  
15   instant invention illustrated with the rake assembly in a  
16   extended position;

17

18       FIG. 5 is a section view taken along lines 1-1 of FIG. 4  
19   illustrating the guide member utilized in one embodiment of  
20   the instant invention;

21

22       FIG. 6 is a section view taken along lines 2-2 of FIG. 4  
23   illustrating the sliding member utilized in one embodiment of  
24   the instant invention;

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2 FIG. 7 is partial perspective view, having the rake  
3 assembly omitted for clarity, illustrating an alternative  
4 construction of the scuffle hoe utilized in the instant  
5 invention.

1    Detailed Description of the Preferred Embodiments

2       While the present invention is susceptible of embodiment  
3       in various forms, there is shown in the drawings and will  
4       hereinafter be described a presently preferred embodiment  
5       with the understanding that the present disclosure is to be  
6       considered an exemplification of the invention and is not  
7       intended to limit the invention to the specific embodiments  
8       illustrated.

9       Referring now to the figures, and generally to FIGS.  
10      1-4, there is shown combination weeding and raking devices  
11      100 and 200 embodying the principles of the present  
12      invention. The combination hand tools provide convenience  
13      and efficiency by employing a scuffle hoe and rake in a  
14      single assembly to minimize operator stooping and tool  
15      exchange when landscaping. The combination tool also  
16      provides for shipping and storing in a compact manner.

17       The combination weeding and raking devices 100 and 200  
18      include an elongated handle 10 of a type well known in the  
19      art preferably constructed of wood but alternatively may be  
20      constructed of fiberglass or metal or suitable combinations  
21      thereof. The elongated handle 10 has a proximal end 14, a  
22      distal end 16 and a gripping surface 12. The distal end 16  
23      supports means for cultivating a working surface illustrated  
24      herein as a scuffle hoe assembly 20 and a means for grooming

1 a working surface illustrated herein as a rake assembly 50 or  
2 folding rake assembly 80. The scuffle hoe and the rake  
3 assembly are preferably oriented on opposite sides of axis A  
4 extending through the longitudinal centerline of the  
5 elongated handle 10. This construction allows the operator  
6 to rotate the handle about the first axis to selectively  
7 utilize the scuffle hoe or the rake.

8 Referring to Figure 1, in one embodiment the scuffle  
9 hoe assembly 20 includes a metal blade 22 formed generally  
10 into a U-shape, including two upright portions 24 and a  
11 bottom portion 26. The upright portions each include an  
12 upper end 28 formed into a ferrule 29 that is adapted to  
13 cooperate with the second end of the elongated handle 16 for  
14 securing the metal blade transverse with respect to the first  
15 axis A. The metal blade 22 includes a first cutting edge 30  
16 and a second cutting edge 32. The first cutting edge 30 is  
17 generally constructed and arranged to cultivate a working  
18 surface during pushing motion of the weeding and raking tool  
19 and the second cutting edge 32 is constructed and arranged to  
20 cultivate a working surface during pulling motion of weeding  
21 and raking tool.

22 Referring to Figure 7, an alternative embodiment of the  
23 scuffle hoe assembly 20 is shown with the rake assembly  
24 omitted for clarity. In this embodiment the distal end 16 of

1 the elongated handle 10 includes a ferrule 66 mounted  
2 thereon. The ferrule includes integrally formed bosses 68.  
3 The bosses are constructed and arranged to cooperate with  
4 apertures 70 located in each of the two upright portions 24  
5 of the metal blade 22 for attaching the metal blade to the  
6 elongated handle. The ferrule may also include stop pins 72  
7 adapted to cooperate with elongated slots 74 to allow the  
8 metal blade 22 to pivot slightly during forward and backward  
9 movement of the weeding and raking tool.

10 Referring to Figures 1 and 2, one embodiment of the rake  
11 assembly 50 includes a plurality of tines 52 fixed in an  
12 outwardly diverging position. The tines 52 having a base end  
13 54, a center portion 56 and a tip end 58, the tip end  
14 including a hook portion 60 for gathering cut vegetation and  
15 grooming cultivated soil. In this embodiment the rake  
16 assembly 50 is slidably mounted along the first axis A and  
17 movable between an extended position (Figure 2) and a  
18 retracted position (Figure 1). The rake 50 extends beyond  
19 the scuffle hoe while in the extended position and the  
20 scuffle hoe extends beyond the rake while the rake assembly  
21 is in the retracted position. The rake assembly and  
22 elongated handle may include a cooperating guiding means to  
23 prevent the rake assembly from rotating around the first axis  
24 during movement or use which may include, but should not be

1 limited to keys and key-slots, guide pins, flats or suitable  
2 combinations thereof. The rake assembly also includes a  
3 means for locking the rake assembly 50 in the extended or  
4 retracted position. The locking means is illustrated herein  
5 as a spring pin 62 (Figure 6) which cooperates with at least  
6 one pocket 64 in the elongated handle. The spring pin 62 may  
7 also cooperate with a key slot (not shown) to prevent  
8 unwanted rotation of the rake assembly 50. Other locking  
9 means well known in the art which may include, but should not  
10 be limited to, collets, cam locks and the like may also be  
11 utilized.

12 Referring to Figures 3-6, an alternative embodiment of  
13 the instant invention is shown including a folding rake  
14 assembly 80. The folding rake assembly includes a sliding  
15 member 82, a guide member 84 and a plurality of tines 52; the  
16 tines 52 having a base end 54, a center portion 56 and a tip  
17 end 58. The base end 54 of the tines is pivotally connected  
18 to the sliding member 82, via a pivot pin 86, to allow  
19 pivotal movement of the tines. The center portion 56 of the  
20 tines 52 extend through apertures 88 in the guide member 84.  
21 Utilizing this construction, movement of the sliding member  
22 82 toward the distal end 16 of the elongated handle 10 causes  
23 the tines 52 to extend and diverge outward. Moving the

1   sliding member 82 toward the proximal end 14 of the elongated  
2   handle causes the tines to fold together and retract.

3           All    patents    and    publications    mentioned    in    this  
4   specification are indicative of the levels of those skilled  
5   in the art to which the invention pertains. All patents and  
6   publications are herein incorporated by reference to the same  
7   extent as if each individual publication was specifically and  
8   individually indicated to be incorporated by reference.

9           It is to be understood that while a certain form of the  
10   invention is illustrated, it is not to be limited to the  
11   specific form or arrangement herein described and shown. It  
12   will be apparent to those skilled in the art that various  
13   changes may be made without departing from the scope of the  
14   invention and the invention is not to be considered limited  
15   to what is shown and described in the specification.

16           One skilled in the art will readily appreciate that the  
17   present invention is well adapted to carry out the objectives  
18   and obtain the ends and advantages mentioned, as well as  
19   those inherent therein. The embodiments, methods, procedures  
20   and techniques described herein are presently representative  
21   of the preferred embodiments, are intended to be exemplary  
22   and are not intended as limitations on the scope. Changes  
23   therein and other uses will occur to those skilled in the art  
24   which are encompassed within the spirit of the invention and

1 are defined by the scope of the appended claims. Although  
2 the invention has been described in connection with specific  
3 preferred embodiments, it should be understood that the  
4 invention as claimed should not be unduly limited to such  
5 specific embodiments. Indeed, various modifications of the  
6 described modes for carrying out the invention which are  
7 obvious to those skilled in the art are intended to be within  
8 the scope of the following claims.